Appl. No. : **09/870,402**
Filed : **May 30, 2001**

AMENDMENTS TO THE CLAIMS

1-32. (Cancelled)

33. (Currently Amended) A method of screening for a breast cancer marker in a patient, comprising the steps of:

providing a patient having at least one breast duct with an external opening thereon;

directing a stream of carrier fluid under pressure into the opening to introduce a volume of carrier fluid into the duct;

removing carrier fluid from the duct through the external opening by applying compression, suction, and heat to the breast, wherein the compression, suction, and heat is applied to the breast by an intraductal breast fluid aspiration device, the device comprising:

a tissue contacting surface defining a first concavity for receiving a breast and a second concavity for receiving a nipple;

a driver, for imparting a compressive force on at least a portion of the tissue contacting surface defining the first concavity;

a vacuum conduit in communication with the second concavity;

a heat source thermally coupled to the tissue contacting surface; and

a sample collector in communication with the second concavity, wherein the sample collector is removably carried by the aspiration device, and wherein the sample collector maintains a low pressure contact with a distal surface of the nipple throughout a range of axial positions along the longitudinal axis of the second concavity;

collecting the removed carrier fluid on the sample collector; and

screening the removed carrier fluid for at least one breast cancer marker.

34. (Cancelled)

35. (Original) A method as in Claim 33, wherein the screening step comprises screening for cytologically abnormal cells.

36-39. (Cancelled)

40. (Previously presented) A method as in Claim 33, wherein the breast cancer marker is associated with at least one condition selected from the group consisting of tumorigenesis, tumor growth, neovascularization, and cancer invasion.

41. (Previously presented) A method as in Claim 33, further comprising the step of manipulating the duct to enhance transport of the carrier fluid within the duct.

42. (Previously presented) A method as in Claim 33, wherein the compressive force comprises peristaltic compressive force.

43-47. (Cancelled)

48. (Currently amended) A method as in Claim ~~47~~ 33, wherein the sample collector comprises a binding system for binding at least one analyte of interest in the breast fluid.

49. (Previously presented) A method as in Claim 48, wherein the binding system comprises a monoclonal antibody.

50. (Currently amended) A method as in Claim ~~43~~ 33, wherein the intraductal breast fluid aspiration device further comprises a housing, wherein the tissue contacting surface is removably carried by the housing, a breast interface on the housing, and at least one cell and cell fragment collector in communication with the breast interface.

51. (Previously presented) A method as in Claim 50, wherein the intraductal breast fluid aspiration device further comprises a fluid reservoir in communication with the interface.

52. (Previously presented) A method as in Claim 50, wherein the intraductal breast fluid aspiration device further comprises an ultrasonic transducer in communication with the interface.

53. (Previously presented) A method as in Claim 33, wherein the step of directing a stream of carrier fluid under pressure into the opening to introduce a volume of carrier fluid into the duct comprises transductally introducing carrier fluid.

54. (Previously presented) A method as in Claim 33, wherein the step of directing a stream of carrier fluid under pressure into the opening to introduce a volume of carrier fluid into the duct comprises percutaneously introducing carrier fluid.

55. (Previously presented) A method as in Claim 33, wherein the carrier fluid comprises a component for enhancing transport of the breast cancer marker from the duct.

56. (Previously presented) A method as in Claim 33, wherein the step of removing carrier fluid is conducted immediately after the step of directing a stream of carrier fluid under pressure into the opening.

57. (Previously presented) A method as in Claim 33, wherein the step of removing carrier fluid is conducted after the step of directing a stream of carrier fluid under pressure into the opening after a sufficient indwelling period of time to permit mobilization of carrier-soluble or carrier-transportable cells, cell components, or markers.

58. (Previously presented) A method as in Claim 33, wherein the carrier fluid comprises an aqueous solution.

59. (Previously presented) A method as in Claim 40, wherein the breast cancer marker comprises a metabolite.

60. (Previously presented) A method as in Claim 40, wherein the breast cancer marker comprises carcinomatous cells or dysplastic cells.

61. (Previously presented) A method as in Claim 40, wherein the breast cancer marker is selected from the group consisting of a protein, a peptide, a glycoprotein, a lipid, a glycolipid, and a proteolipid.

62. (New) A method as in Claim 33, wherein the range of axial motion of the sample collector is achieved by bending or pivoting of the sample collector.

63. (New) A method as in Claim 33, wherein the range of axial motion is throughout the sample collector.

64. (New) A method as in Claim 33, wherein the range of axial motion is at a releasable attachment point attaching the sample collector to the patient interface.

65. (New) A method as in Claim 50, wherein the range of axial motion is at a releasable attachment point attaching the sample collector to the housing.

66. (New) A method as in Claim 33, wherein the sample collector is mounted on a surface of a compressible foam.

67. (New) A method as in Claim 33, wherein the sample collector comprises a compressible foam.